# ABSTRACTED
# Mississippi Pandemic Influenza Preparedness and Response Plan
## Functional Annex 7.0

## Mississippi State Department of Health
Public Health Emergency Preparedness and Planning Program

Version 1.3
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***A Note about Abstracted Plan headings:***

*To keep the headings consistent between the Abstracted Plan and the original, Abstracted Plan heading, figure and table labels have not be realigned. Thus there may be missing numbers and letters within the outline structure.*

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# II. PLAN PURPOSE AND SCOPE

This Plan establishes a framework for management of State-wide operations during an influenza pandemic. The Plan embraces the National Response Plan (NRP) and the National Incident Management System (NIMS). The State of Mississippi Comprehensive Emergency Management Plan (CEMP) and the MSDH Emergency Support Function (ESF)-8 Concept of Operations Plan for Public Health and Medical Emergencies (CONOPS Plan) provide an organizational structure to allow emergency medical services personnel and health care facilities to work together in a collaborative way and to provide assistance in situations where local resources are overwhelmed. This Plan is based on policies and procedures established within these two documents and serves as a Functional Annex to the CONOPS Plan.

The Plan is organized as follows:

- Functional Annex 7.0 – This public health focused Plan provides an overview of the State's approach to PI preparedness and response including planning situation and assumptions, State-wide roles and responsibilities (concept of operations), and general support requirements (administration and logistics).

- Additional Functional Annexes – Additional Functional Annexes provide specific information and direction, emphasizing responsibilities, tasks, and operational actions that pertain to the function. While the Functional Annexes name and describe the specific tasks, they do not describe detailed procedures to perform them. The detailed procedures shall be developed by the Mississippi primary and support agencies in the form of Interagency Coordination Procedures (ICPs), Standard Operating Procedures (SOPs), and Standard Operating Guides (SOGs). Functional Annexes describing specific aspects of PI planning and response include:
    - Preparedness in Non-Governmental, Business, and Industry;
    - Preparedness in Department of Education;
    - Preparedness in Institutes of Higher Learning;
    - Preparedness in Safety and Public Security;
    - Continuity of Critical Functions;
    - Sustaining the Economy, Trade and Business; and
    - Statewide Workforce.

# III. SITUATION AND ASSUMPTIONS

## A. Situation

PI represents a unique public health emergency, on the one hand, and a local/community disaster, on the other. PI will have a huge impact on all elements and segments of society. A large number of cases will increase the burden to hospitals and other health care infrastructure already stressed by "normal" case-load volume and acuity. A high death rate is expected. Health and medical personnel, emergency first responders, and public works and services employees may be especially vulnerable due to the nature of their work.

As there is no pharmaceutical or other therapeutic *cure* for PI. Control strategies focus on prevention, by immunization, and control by careful use of antiviral medications and strict respiratory hygiene and personal protection, and by other non-pharmaceutical methods. Due to shortages and delays in obtaining effective vaccine and antivirals, the early control of a pandemic will rely on non-pharmaceutical measures.

## B. Assumptions

The following general and Mississippi-specific assumptions have informed the development of the Plan:

1 All state agencies, businesses, other non-governmental organizations, school districts—in short, each aspect of the public and private sectors—will be adversely affected by PI; and all but critical missions and essential services may be suspended for an extended period of time (months).

2 As the pandemic will be ubiquitous; it will be folly to depend or rely upon outside aid and resources. Hence, as support and response during the pandemic must be primarily LOCAL; planning and preparedness must be LOCAL ventures during the pre-pandemic period.

3 Susceptibility to the PI subtype will be universal.

4 Some persons will become infected but not develop clinically significant symptoms. Asymptomatic or minimally symptomatic individuals can transmit infection.

5 Seasonality of a pandemic cannot be predicted with certainty.

6 Mississippi can not depend upon a lengthy "lead time" between determination of the advent of the pandemic (elsewhere in the world) and the first outbreak in Mississippi. There may be less than six weeks of warning from the time the pandemic is announced before it actual reaches Mississippi.

7 The pandemic may last up to 18 months and may occur in two or three waves, with both waxing and waning mortality and morbidity; though the first wave is likely to be the most challenging in these latter regards.

8 A "wave" of severe disease could last up to four months.

9 PI, like seasonal influenza, is transmitted principally by droplet vector, by aerosolization, and, probably to a slightly lesser extent, by extremity contact and central redirection to the mucosa of the oro/nasopharynx and conjunctiva.

10 Short of a quantum leap in current vaccine manufacturing technology and production capacity, vaccine to the novel pandemic viral strain will not be available for the first four months of the pandemic (the first wave), and then it will likely exist in only limited quantities requiring discerning allocation.

11 Antivirals (even the neuraminidase-inhibiting agents) do not have proven efficacy against the novel viral strain (consider the emerging resistance of some H5N1 Avian influenza viral clades in Egypt to oseltamivir); even if it does have, its use is very time-sensitive ("golden period"); and even if it does have, the quantity of courses for treatment (much less prophylaxis) may be insufficient to be applicable to the broad population.

12 Antivirals are NOT indicated for very young infants.

13 As a result of the three immediately preceding assumptions, non-pharmaceutical interventions will emerge, almost by default, as a principal arm of mitigation strategy, particularly during the first wave.

14 At some point, isolation and quarantine may be a necessity. While a "voluntary" application of community mitigation techniques with hopefully high levels of "voluntary" compliance is the preferred approach; a dire scenario (extremely unlikely) could necessitate mandatory implementation of isolation, quarantine, and social distancing.

15 Aggregate absenteeism for those who are ill, caring for the ill or for the "worried well" may exceed 50%, with time off work ranging from days to weeks, possibly months.

16 Employing State and county census data for the year 2005, reflecting a population of 2.9 million, and a 25% gross attack rate (1918-like scenario), Mississippi would observe, over an 8-week period (See Attachment C):

a) 646,220 individuals who become ill;

b) 323,110 who would seek out-patient care;

c) 68,416 who would ordinarily require conventional hospitalization

d) >14,000 who would need intensive or critical care;

e) >7,200 who would require mechanical ventilation; and

f) 15,635 who would die as a direct or indirect result of the pandemic.

17 Based on a March 2007 report issued by the Trust for America's Health, Mississippi would experience a profound economic blow: a projected gross domestic product loss of $4.9 billion, in the context of an annual 2005 (year of Hurricane Katrina) GDP of $81.3 billion. This loss would amount to a nearly 6% decline, making it by percentage reduction the 7th hardest-hit state among the 50.

# IV. CONCEPT OF OPERATIONS

The Office of the Governor will use the full spectrum of its authority and resources to accomplish assigned roles, responsibilities, functions, goals, and missions of the Plan. In accordance with responsibilities outlined in the HHS PI Plan (Part 2: Introduction, page I-4; www.hhs.gov/pandemicfluplan/part2.pdf [accessed 02/03/06]), Federal, State, and local roles during an influenza pandemic are the following:

## A. Federal

The Federal Department of Health and Human Services will support affected states or jurisdictions during an influenza pandemic by:

- Conducting outbreak investigations, as requested;
- Conducting epidemiologic and laboratory-based studies ("special studies");
- Providing ongoing information from the national influenza surveillance system on the pandemic's impact on health and the healthcare system;
- Expanding supply of antiviral drugs by stimulating increased U.S. based production capacity;
- Expanding U.S.-based production capacity for pandemic vaccine and working with manufacturers to ensure that pandemic vaccine is produced at full capacity;
- Distributing public stocks of antiviral drugs and other medical supplies from the Strategic National Stockpile to the states;
- Distributing public stocks of vaccines, when they become available;
- Providing guidance on community containment strategies, including travel restrictions, school closing, and quarantine;
- Communicating with the public via the news media; and
- Monitoring the response.

## B. State of Mississippi

To coordinate the PI response, responsibilities of the MSDH include:

- Enhancing disease surveillance to ensure early detection of the first cases of PI within the State or affected jurisdiction;
- Distributing public stocks of antiviral drugs and vaccines and providing local physicians and hospital administrators with updated guidance on clinical management and infection control as the situation unfolds;
- Preventing local disease transmission using a range of containment strategies;
- Providing ongoing communication with the public (about the response effort, including the purpose and duration of containment measures); and
- Providing psychological and social support services to emergency field workers and other responders.

## C. Local Level

During a pandemic, local jurisdictions are responsible for coordinating health care activities within the community and should work with local health departments and hospitals to:

- Improve communication with medical care providers and health care organizations;
- Monitor local hospital resources (e.g., adult and pediatric hospital beds, intensive care unit beds, emergency department beds, medical supplies, respirators and other equipment, mortuary capacity);
- Address emergency healthcare staffing needs and other medical surge capacity issues;
- Encourage coordination among state and federal healthcare facilities, such as Veterans Administration hospitals, Indian Health service facilities, and Department of Defense hospitals;
- Conduct contingency planning with:
    - Private sector groups that support hospital functions, to ensure continuity of operations during the pandemic;
    - Public utilities to ensure continued service during the pandemic;
    - Local law enforcement agencies who can help maintain order if a hospital is overwhelmed by a large volume of patients (ill or worried about being ill);
    - Identify alternative care sites for patient care (child and adult) and sites for quarantine; and
    - Identify community-based organizations that can provide psychological and social support to healthcare workers, public health field workers, and other emergency responders.

# V. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

## A & B. Statewide & Public Health Command and Control

The CEMP defines MEMA as the primary interface between local authorities and the state during an emergency. ESF 8, as an Annex to the CEMP, further defines MSDH as the responsible State authority for command and control of public health emergencies. MEMA and MSDH will coordinate State-level command and control during a PI incident.

The MSDH CONOPS Plan and this Plan establish the framework for managing MSDH operations during Influenza Pandemic. Other agencies will be involved in a variety of capacities as outlined below.

Basic operational concepts are illustrated below:

- **Mississippi State Department of Health:** Conduct impact assessments for PI; manage information needed to support PI operations which includes incident management plan and development of response and recovery strategies.
- **Mississippi Emergency Management Agency:** Coordinate State and local assets to assist State and local officials in operations required for a PI response.
- **Mississippi Department of Human Services:** Coordinate efforts to provide basic human needs following PI.

- **Mississippi Healthcare Coalition / Mississippi Hospital Association:** Provide and coordinate local medical resources in response to PI to include population-based triage, medical surge capabilities, and emergency medical transportation.
- **Mississippi Department of Agriculture and Commerce:** Maintain plan for surveillance and mitigation of influenza disease in animals and coordinate communication of influenza disease outbreak in animals to public health.
- **Mississippi Board of Animal Health:** Conduct surveillance and coordinate mitigation of influenza disease in animals; communicate influenza disease outbreak in animals; and coordinate burial and disposal of animals affected by influenza.
- **Mississippi Department of Environmental Quality:** Coordinate the provision of State support to local governments in response to a PI outbreak.
- **Local Mortuary Services and Coroners:** Provide logistical and medical resource support to State and local government organizations in response to PI.
- **Mississippi Department of Mental Health:** Coordinate efforts to provide basic human mental health needs during and following an influenza pandemic.
- **Mississippi Military Department:** Provide military support to civil authorities including personnel, equipment, and sheltering resources.
- **Mississippi State Board of Pharmacy:** Provide logistical and medical resource support to State and local government organizations in response to PI.
- **Department of Rehabilitation Services-Vocational Rehabilitation:** Coordinate efforts to provide basic human needs to special needs populations following an influenza pandemic.
- **Mississippi Veterinary Medical Association:** Coordinate veterinary services and animal care with the Department of Agriculture and Commerce.
- **Division of Medicaid:** Coordinate efforts to provide basic human needs to special needs populations following an influenza pandemic.
- **Board of Medical Licensures:** Assist in recruitment and credential validation of physicians and other practitioners for pre-placement into the ESAR-VHP.
- **Board of Nursing:** Assist in recruitment and credentialing of nurses and volunteer nurses.
- **Mississippi Department of Education:** Coordinate educational needs, potentially long-term, of elementary and secondary students; coordinate mitigation strategies applicable to education systems.
- **Mississippi Institutes of Higher Learning:** Coordinate educational needs, potentially long-term, of community college and senior college students; coordinate mitigation strategies applicable to education systems.
- **Mississippi Department of Public Safety:** Coordinate and provide State telecommunications support; coordinate personnel and resources from State agencies to assist State and local government agencies in maintaining order, enforcing laws, controlling ingress and egress, and protecting life and property following an influenza pandemic.

## C. Public Health Epidemiological and Laboratory Surveillance

MSDH uses multiple mechanisms to monitor influenza activity under normal circumstances. The PI Plan outlines plans and resources for the enhanced surveillance that would occur during a pandemic. The organizations involved in Epidemiology and Lab Surveillance are detailed below. A phased action matrix detailing the timing of activities is provided in Attachment F.

- **MSDH Department of Epidemiology -** Conduct human surveillance of pandemic influenza; conduct pandemic influenza impact assessments; use data to describe and monitor PI in Mississippi; set epidemiological priorities and assist in the planning, implementation, and evaluation of PI efforts; and manage information needed to support pandemic operations.
    - **MSDH Public Health Laboratory -** Perform all necessary influenza virus isolation and identification; determine whether the circulating influenza A strains possess common hemagglutinin subtypes or whether the circulating strains possess novel or avian hemagglutinin subtypes.
    - **Mississippi Hospitals and Sentinel Providers -** Conduct epidemiologic surveillance and coordinate mitigation of influenza disease in response to pandemic influenza; communicate influenza disease outbreak data to MSDH.
    - **Mississippi Clinical Laboratories -** Conduct laboratory surveillance in response to pandemic influenza.
    - **Mississippi Department of Education, Schools and Institutes of Higher Learning** – Conduct and report surveillance of influenza disease outbreak among the student population.
- **Mississippi Veterinary Research and Diagnostic Laboratory and Mississippi Board of Animal Health -** Conduct surveillance and coordinate mitigation of influenza disease in animals; communicate influenza disease outbreak in animals; and coordinate burial and disposal of animals affected by influenza.

### Zoonotic Influenza Surveillance and Response

Mississippi participates in several programs to test animals, both wild and domestic for Avian Influenza. The National Poultry Improvement Plan (NPIP) is cooperatively administered by the USDA and tests flocks of poultry when they go to market. Other programs test waterfowl and backyard flocks for AI. Mississippi also participates in the screening programs for highly pathogenic H5N1 avian influenza in wild migratory birds that are jointly conducted by the USDA APHIS Wildlife Services and the U.S. Department of the Interior's U.S. Geological Survey and U.S. Fish and Wildlife Service.

The Office of the State Veterinarian, Board of Animal Health, Mississippi Department of Agriculture and Commerce (MDAC) maintains all avian influenza surveillance and response plans. In the event that AI is identified in Mississippi, the Office of the State Veterinarian will in turn immediately notify public health authorities to ensure that proper measures to protect human health are initiated.

### Enhanced Human Surveillance

Once the first case is detected in North America, ILI reporting will be increased to a daily frequency. Surveillance nurses will continue to collect reports from all participating providers, either by fax, email or pick-up. Surveillance nurses will enter the ILI data daily into the BT/ILI system. The ILI data will be reviewed daily by Epidemiology staff in the Central Office at MSDH to determine where increases of ILI activity are occurring. Appropriate influenza specimen collection will be enhanced. Information will be disseminated to all healthcare facilities on collecting appropriate influenza specimens. This will include which patients to collect specimens from and the information needed of these patients (i.e., signs and symptoms, travel history, etc.). Surveillance will be intensified in the outbreak area(s) to permit real-time reporting of cases since effective containment measures may slow the geographical spread and local intensity of the pandemic in its early phases. If the number of cases is manageable, individual case investigation and laboratory confirmation will be performed to permit appropriate case management that may include isolation and/or quarantine, contact tracing and monitoring, and the use of antiviral drugs for treatment of cases and targeted prophylaxis of contacts. Once the numbers of cases increase beyond the level at which effective contact tracing is possible, active surveillance will continue but the response will be characterized more by mass antiviral prophylaxis and treatment, social distancing, and possibly quarantine as warranted.

### Monitoring Community Impact of Influenza-Related Illness

**The Mississippi State Medical Asset / Resource Tracking Tool (SMARTT) -** The State of Mississippi will implement State Medical Asset/Resource Tracking Tool (SMARTT) based on the North Carolina/South Carolina SMARTT. This tracking tool will be managed by the Mississippi Office of Emergency Preparedness and Response (OEPR). This tool queries healthcare entities for resource and capability information, providing information on bed capacity, pharmaceuticals, and personal protective equipment (PPE) available in the various healthcare settings across the state.

**Analysis and Reporting of Pandemic Influenza Data to the CDC –** The Mississippi SMARTT will track daily numbers and rates of newly hospitalized patients, which hospitals are seeing pandemic influenza patients, and numbers of hospital-associated deaths. Deaths occurring outside of the hospital and in other facilities will be reported to MSDH via Local Mortuary Services and Coroners' reports in accordance with the Mississippi List of Reportable Diseases and Conditions. MSDH is currently pursuing the development of a statewide electronic death reporting system. Epidemiologic and laboratory surveillance activities are described elsewhere in Section V-C. All outpatient, inpatient, laboratory, and mortality data will be collated on a daily basis by MSDH and reported to the CDC using established electronic reporting mechanisms.

## D. Public Information and Communications

During an emergency, the MSDH spokesperson (the State Health Officer or his designee) is the chief person responsible for communicating health risk information to the public. The MSDH Director of

Communications will direct public information activities from the EOC and coordinate with the JIC and event sites. The ESF 8 PIO/Emergency Communications Officer will report to the State Health Officer, the governor's office and MEMA.

The following entities are involved in public information and communications activities:

- **MSDH Office of Communications / Director of Communications / Emergency Communications Manager:** Authorize dissemination of PI information to external media, internal stakeholders, and cooperating State and Federal agencies.
- **MSDH Health Informatics / Technology Infrastructure Support:** Coordinate and provide State telecommunications support to State and local pandemic response elements.
- **Information Technology Services:** Coordinate and provide all communication devices and parameters such as wireless connectivity capability, software packages, FAX software, email programs, and internet.
- **Mississippi Emergency Management Agency:** Coordinate public information dissemination via the Joint Information Center.
- **Capital Police:** Ensure safety of Communications personnel transported between MSDH EOC and JIC.

A phased action matrix detailing the timing of activities is provided in Attachment F.

Two-way communication will occur via the State Emergency Operations Center Interoperable Communications System.

## Operational Plan for Two-Way Communication

Two-way communication will occur via the State Emergency Operations Center Interoperable Communications System.

## PI Risk Communication Plan

**Overview.** The goal of Public Information is to gather, prepare, and distribute factual and timely health information to the media, providers, and the public. A Risk Communication Plan has been developed by the Mississippi State Department of Health.

### Key Steps in the Public Information Process

- Activating the MSDH Risk Communication Plan;
- Notifying key personnel through developed database;
- The Director of Communications will report to the Emergency Operation Center and staff including public information officers will be dispatched to the Joint Information Center and to event sites;
- Coordinating among agencies (regional and federal);
- Holding press conferences and media briefings;
- Developing and printing pamphlets and other materials to be disseminated to the public; and

- Establishing a call center utilizing the 24/7 hotline in three languages for the public and the medical community and continually updating the MSDH website.

The Director of Communications will work with the Mississippi Emergency Management System (MEMA), the Governor's Office, and MSDH first responders, Office of Epidemiology, the Office of Health Protection and local Health Officers in order to coordinate public messages.

**Staff Responsibilities.** During an emergency, the MSDH spokesperson (the State Health Officer or his designee) is the chief person responsible for communicating health risk information to the public. The MSDH Director of Communications will be the designated ESF 8 PIO/Emergency Communications Officer for health related emergencies. This officer will direct public information activities from the EOC and coordinate with the JIC and event sites. The ESF 8 PIO/Emergency Communications Officer will report to the State Health Officer, the governor's office and MEMA.

**Response Activities.** The ESF 8 PIO/Emergency Communications Officer will be responsible for directing the following response activities:

- Evaluating the need to communicate risk information to the public;
- Issuing pre-prepared and new press releases;
- Organizing and implementing press briefings and press conferences;
- Developing materials templates that address agent and threat to health would be distributed to the public and posted on the MSDH web site (300,000 1-sided sheet can be produced in 24 hrs when printing at our internal print shop);
- Work with MEMA in coordinating the activation of communications systems (e.g., Emergency Alert System) and press releases;
- Monitoring media reports;
- Initiating rumor control activities;
- Activating the public call center and expanding capability of 24/7 hotline capacity; and
- Contacting the CDC Office of Communications.

**Risk Communication Materials and Resources.** The MSDH Communications Office has developed PI and emergency preparedness materials (a PI and emergency preparedness campaign). As part of the CDC work plan, MSDH has permanent materials specific to a variety of emergency scenarios. Several types of public information material templates will be prepared in advance:

- Public announcements that inform and direct the public to the website and the 24/7 hotline for updates;
- Patient information sheets for specific agent or agents; and
- Media advisories of where and when updates will occur.

The following additional resources will be used during a health emergency:

- Web sites: sources of fact sheets and information on the pandemic influenza viral strain;

- CDC PI web site (www.pandemicflu.gov) and MSDH websites www.msdh.state.ms.us, www.pandemicflums.gov; and
- Emergency Alert System (EAS), which can be accessed through the MEMA.

**Call Center.** The Director of Communications will activate the full emergency operational aspects of the 24/7 hotline. During a health emergency, additional lines will be added and emergency messages in three different languages will be available. Designated staff will be mobilized to establish a temporary call center at the MSDH EOC.

## E. Preparedness in Healthcare

The initial response to an influenza pandemic will include medical care, community containment and personal protective measures, and targeted use of antiviral medications. External resources will not be available as the pandemic will most likely impact all areas. As support and response during the Pandemic must be primarily LOCAL; planning and preparedness must be LOCAL ventures during the pre-pandemic period.

Employing State and county census data for the year 2005, reflecting a population of 2.9 million, and a 25% gross attack rate (1918-like scenario), Mississippi would observe, over an 8-week period (See Attachment C):

- 646,220 individuals who become ill;
- 323,110 who would seek out-patient care;
- 68,416 who would ordinarily require conventional hospitalization
- >14,000 who would need intensive or critical care;
- >7,200 who would require mechanical ventilation; and
- 15,635 who would die as a direct or indirect result of the pandemic.

There is currently a healthcare worker shortage, and hospitals are already operating at or near capacity. There may be a need for health care surge facilities which will be staffed by non-traditional healthcare providers and possibly members of the community.

The following entities are involved in healthcare preparedness activities:

- **Mississippi State Department of Health:** Conduct impact assessments on hospitals and healthcare systems; manage information needed to support hospital and healthcare systems operations which includes incident management plan and development of response and recovery strategies.
- **Mississippi Emergency Management Agency:** Coordinate State and local assets to assist hospitals and healthcare systems in operations required for a PI response.
- **Mississippi Hospital Association:** Provide advocacy and consultation between the MSDH and individual hospitals and healthcare systems.

- **Board of Medical Licensure:** Assist in recruitment of physicians and other practitioners for pre-placement into the ESAR-VHP. Assist with credentialing verification of medical practitioners.
- **Mississippi Department of Environmental Quality:** Coordinate the provision of State support to hospitals and healthcare systems in response to a PI outbreak.
- **Local Mortuary Services and Coroners:** Provide logistical and medical resource support to hospitals and healthcare systems in response to PI.
- **Mississippi Department of Mental Health:** Coordinate efforts to provide basic human mental health needs following an influenza pandemic.
- **Mississippi Ambulance Services:** Provide and coordinate local medical resources in response to PI to include population-based triage, medical surge capabilities, and emergency medical transportation.

A phased action matrix detailing the timing of activities is provided in Attachment F.

## Expanding Healthcare Services to Alternate Care Sites

As lead agency for ESF8, the Mississippi State Department of Health (MSDH) has chosen Mississippi Community Colleges (MCC) as sites for Regional Special Medical Needs Shelters and as alternate care sites for Pandemic Influenza. MCC are chosen because of services already in place including: security, food service, separate water systems, allied health or nursing programs, and the fact that the community college locations are well known.

Currently, the MSDH has a MOA with seven (7) community colleges, and is in the process of obtaining a MOA with Hudspeth Regional Center. These eight (8) facilities will have a total capacity of approximately 1100 patients.

Operation of the shelter/care site is the responsibility of the MSDH. There are two (2) teams designated in each of the nine Public Health Districts. Each team is comprised of two facility managers, two nurse managers, eight nursing staff, two logistics staff, four clerical staff, a social worker, an environmentalist, and a mental health worker from the Department of Mental Health. The MCC provides support staff, if available, for the operation and security of the site. All necessary supplies for the operation of the site, including cots, medical supplies, office supplies, forms, etc. are stored at the MCC for convenience and to decrease the set-up time for opening. Pharmaceuticals to support alternate care sites will be obtained through state caches and federal assets received by the Division of the Strategic National Stockpile for pandemic influenza.

## MSDH Consensus Statement on Infection Control Precautions and Guidance for Mitigating Transmission within Healthcare Facilities

Information addressing modes of transmission of the virus, recommended infection control precautions, and when control precautions should be escalated according to triggers appropriate to the progression of the pandemic stages are available in the full Plan. Authoritative statements as to infection control precautions exist in several documents that are referenced below.

- http://www.pandemicflu.gov/plan/healthcare/hospitalchecklist.html
- http://www.pandemicflu.gov/plan/healthcare/maskguidancehc.html
- http://www.hhs.gov/pandemicflu/plan/sup3.html
- http://www.hhs.gov/pandemicflu/plan/sup4.html
- http://www.hhs.gov/pandemicflu/plan/sup5.html

## F. Community-Wide Healthcare Coalitions

This section is currently under development.

## G. Community Mitigation/Non-Pharmaceutical Interventions

There is no pharmaceutical or other therapeutic *cure* for PI. Control strategies focus on prevention, by immunization, and control by careful use of antiviral medications and strict respiratory hygiene and personal protection, and by other non-pharmaceutical methods. Due to shortages and delays in obtaining effective vaccine and antivirals, the early control of a pandemic will rely on non-pharmaceutical measures.

There are laws which support the statutory authority for mandatory isolation and quarantine, however MSDH has embraced the concept of "voluntary" compliance with selected non-pharmaceutical interventions (NPIs). MSDH concurs with the Federal Department of Health and Human Services (HHS) Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early, Targeted, Layered Use of Non-pharmaceutical Interventions and has adopted the various elements.

Community mitigation and non-pharmaceutical interventions requires assistance from a variety of agencies supporting ESFs 5, 6, 7, 8, 13, 14 and 15. Roles are identified below.

**MEMA**

- Maintain liaison with and cooperate with emergency management agencies and organizations of local jurisdictions and of other states, the federal government and the private sector in implementing programs for disaster mitigation/ prevention, preparedness, response, and recovery.
- Coordinate and release of any and all disaster/ emergency-related information to the public.

**Mississippi Commission for Volunteer Services**

- Assist in coordination of Mississippi Voluntary Organizations Active in Disasters and other non-governmental volunteer organizations and in donations management.

**Mississippi Department of Archives and History**

- Manage and preserve appropriate vital records.

**Mississippi Department of Education**

- In collaboration with MSDH, define strategy for dismissal or closure.

- Develop system(s) for notifying parents about: dismissal of students from classes or childcare, communication during dismissal, and re-opening.
- Provide multilingual support to affected population.
- Reallocate food supplies using available public school resources.

**Mississippi Department of Environmental Quality**

- Supply manpower to support health and human services functions.

**Mississippi Department of Human Services**

- Develop and implement special services for the aged and handicapped.
- Secure and distribute Disaster Assistance support including managing Individual and Household Grant Programs, financial resources and loans.

**Mississippi Department of Marine Resources**

- Assist in special and/or unique disaster and/ or emergency events that occur in or near the areas of DMR responsibility.
- Support law enforcement and security activities as appropriate.

**Mississippi Department of Mental Health**

- Provide mental health services to disaster victims as needed.

**Mississippi Department of Public Safety**

- Assume primary responsibility for law enforcement activities in disaster/emergency conditions.
- Provide Emergency and Disaster Medical and Mortuary support.
- In coordination with the MSDH, support Disaster Mortuary (DMORT) teams.

**Mississippi Department of Rehabilitation Services**

- Support efforts to relocate and shelter the special needs population.
- Provide personnel and resources to continue services for relocated clients.

**Mississippi Department of Transportation**

- Coordinate transportation requests from disaster areas and establish priorities for transportation.
- Establish transportations plans for receipt, coordination and/ or distribution of food, materials, and supplies.

**Mississippi Department of Wildlife, Fisheries and Parks**

- Assist law enforcement officials in emergency law enforcement duties.
- Assist with primary communications and provide back-up communications systems.

**Mississippi Division of Medicaid**

- Continue to provide medical support to existing recipients.
- Provide medical support to special needs population, especially those moved into temporary facilities as the result of an evacuation.

**Mississippi Gaming Commission**

- Advise the State EOC regarding temporary closure and re-opening orders for casinos.
- Provide information on status of the evacuation of patrons and employees.

**Mississippi Institutions of Higher Learning**

- In collaboration with MSDH, define strategy for dismissal or closure.
- Provide training, education, and technical support.
- Provide multilingual support and capabilities.
- Establish shelters at Institutions of Higher Learning properties that are stocked and equipped.

**Mississippi Military Department**

- Provide defense support to civil authorities.
- Assist with primary communications and provide back-up communications systems.
- Assist emergency transportation efforts.
- Assist in preparedness measures.
- Assist in commodity distribution.
- Assist in emergency law enforcement or security enforcement support.

**Mississippi Office of the Governor**

- Coordinate all non-Stafford Act response and recovery activities.
- Assist in coordinating the Joint Information Center emergency public information messages.
- Facilitate interaction with non-governmental organizations to include corporations, international aid and assistance.

**Mississippi Public Broadcasting**

- Provide emergency public information, training and education using available broadcasting resources.
- Augment communications emergency support functions including notification and warning.
- Provide communications support to facilitate the dissemination of public information.

**Mississippi State Board for Community and Junior Colleges**

- In collaboration with MSDH, define strategy for dismissal or closure.
- Provide vocational/ technical support as needed.
- Provide facilities, personnel and supplies for shelter support as needed.

**MSDH**

- Provide leadership in directing, coordinating, and integrating the overall State efforts to provide health, medical, public health, mortuary/victim identification, personnel, supplies, equipment, and some social services assistance to the affected area.
- Direct and coordinate regional and county facilities in providing medical and public health assistance.
- Provide information on any public health statements or precautions.
- Convene a meeting of ESF-8 partners to assess the situation and determine appropriate public health and medical actions.

- In collaboration with other departments and agencies, determine the thresholds for a comprehensive State government public health and medical response based on specific event information.
- Assist local, and public health and medical authorities with epidemic surveillance and coordination.
- Coordinate with MOHS and local officials on the messages released to the public to ensure that communications are consistent and accurate.
- Evaluate the incident with its partner organizations and make recommendations to the appropriate public health and medical authorities regarding the need for quarantine, shelter-in-place, or isolation to prevent the spread of disease.
- Work with local health and legal authorities to recommend the most feasible, effective, and legally enforceable methods of isolation and quarantine.

**State of Mississippi Attorney General**

- Act as counsel to state agencies regarding the legal aspects of emergency activities.
- Provide personnel to gather information for Disaster Assistance support.

A phased action matrix is also provided in Attachment F.

**Table 7 – Pandemic Severity Index**

| Pandemic Severity Index | WHO Phase 6, U.S. Government Stage 3 | WHO Phase 6, U.S. Government Stage 4 (First human case in the United States) | WHO Phase 6, U.S. Government Stage 5 (First laboratory confirmed cluster in MS or Memphis) |
|---|---|---|---|
| 1 | Alert | Standby | Activate |
| 2 and 3 | Alert | Standby | Activate |
| 4 and 5 | Standby | Standby/Activate | Activate |

**Legend:**

- Alert: Notification of critical systems and personnel of their impending activation.
- Standby: Initiate decision-making processes for imminent activation, including mobilization of resources and personnel.
- Activate: Implementation of the community mitigation strategy.

| Table 8 – Summary of the Community Mitigation Strategy by Pandemic Severity | | | |
|---|---|---|---|
| **Interventions* by Setting** | **Pandemic Severity Index** | | |
| | **1** | **2 and 3** | **4 and 5** |
| **Home Voluntary isolation** of ill at home (adults and children); combine with use of antiviral treatment as available and indicated | **Recommend†§** | **Recommend†§** | **Recommend†§** |
| **Voluntary quarantine** of household members in homes with ill persons (adults and children); consider combining with antiviral prophylaxis if effective, feasible, and quantities sufficient | **Generally not recommended** | **Consider**** | **Recommend**** |
| **School Child Social Distancing** | | | |
| -dismissal of students from schools and school based activities, and closure of child care programs | **Generally not Recommended** | **Consider: ~4 weeks††** | **Recommend:~ 12 weeks§§** |
| -reduce out-of-school social contacts and community mixing | **Generally not Recommended** | **Consider: ~4 weeks††** | **Recommend: ~12 weeks§§** |
| **Workplace/Community Adult Social Distancing** | | | |
| -decrease number of social contacts (e.g. encourage teleconferences, alternatives to face-to-face meetings) | **Generally not recommended** | **Consider** | **Recommend** |
| -increase distance between persons (e.g., reduce density in public transit, workplace) | **Generally not recommended** | **Consider** | **Recommend** |
| -modify postpone, or cancel selected public gatherings to promote social distance (e.g., postpone indoor stadium events, theatre performances) | **Generally not recommended** | **Consider** | **Recommend** |
| -modify work place schedules and practices (e.g. tele-commute, staggered shifts) | **Generally not recommended** | **Consider** | **Recommend** |

**Legend**

- Generally Not Recommended = Unless there is a compelling rationale for specific populations or jurisdictions, measures are generally not recommended for entire populations as the consequences may outweigh the benefits.
- Consider = Important to consider these alternatives as part of a prudent planning strategy, considering characteristics of the pandemic, such as age-specific illness rate, geographic distribution, and the magnitude of adverse consequences. These factors may vary globally, nationally, and locally.
- Recommended = Generally recommended as an important component of the planning strategy.
- *All these interventions should be used in combination with other infection control measures including hand hygiene, cough etiquette and personal protective equipment such as face masks. Additional information on infection control measures is available at www.pandemicflu.gov.
- †This intervention may be combined with the treatment of sick individuals using antiviral medications and with vaccine campaigns, if supplies are available.
- §Many sick individuals who are not critically ill may be managed safely at home. The contribution made by contact with asymptomatically infected individuals to disease transmission is unclear. Household members in homes with ill persons may be at increased risk of contracting pandemic disease from an ill household member. These household members may have asymptomatic illness and may be able to shed influenza virus that promotes community disease transmission. Therefore, household members of homes with sick individuals would be advised to stay home.
- **To facilitate compliance and decrease risk of household transmission, this intervention may be combined with provision of antiviral medications to household contacts, depending on drug availability, feasibility of distribution, and effectiveness; policy recommendations for antiviral prophylaxis are addressed in a separate guidance document.
- ††Consider short-term implementation of this measure—that is, less than 4 weeks.
- §§Plan for prolonged implementation of this measure—that is, 1 to 3 months; actual duration may vary depending on transmission in the community as the pandemic wave is expected to last 6-8 weeks.

## Isolation and Treatment of Ill Persons

*Isolation* refers to the separation of persons who have a specific infectious illness from those who are healthy and to the restriction of their movement to stop the spread of that illness. People in isolation may be cared for in their homes (ideally), in hospitals, or in designated healthcare facilities or alternate care sites. Simple, straight-forward steps that individuals and families may take to prevent the spread of respiratory illnesses will apply to PI as well; and they are worthy of emphasis and reiteration:

- Avoid close contact with people who are sick (3-feet radius rule).
- Wash hands after any certain or questionable contact (as often as hourly otherwise).
- Cover mouth and nose with a tissue when coughing or sneezing.
- If sick, STAY at home and keep at least 3 feet away from others.

Individuals who are able to be cared for at home should:

- Receive NI antivirals within 48 hours of onset of symptoms, unless contraindicated.
- Get plenty of rest.
- Drink a lot of fluids (32 to 128 oz/day).
- Avoid using alcohol and tobacco.
- Consider taking over-the-counter medications to relieve the symptoms of influenza, but Aspirin should NOT be given to children under 12 out of concern for Reye's syndrome.
- Stay home and avoid contact with other people; avoid use of common linens/towels, etc. Laundry and meal utensils do not, however, require special or separate attention, beyond that ideal in normal circumstances (detergent, appropriately warm/hot water, etc.)
- Cover nose and mouth with a tissue when coughing or sneezing, and dispose of it properly and expeditiously.

In an influenza pandemic, some individuals who are cared for at home may develop complications. In this event, these persons should seek medical care immediately. The Warning Signs to seek urgent, out-of-home care:

- In children, would include:
    - High or prolonged fever (T > 103 degrees F; or T > 101 continuously over 12 hours, despite acetaminophen)
    - Fast breathing (tachypnea) or trouble breathing (dyspnea)
    - Bluish skin coloration (cyanosis)
    - Inadequate fluid intake or inability to hold down oral intake, indirectly indicated by marked reduction in urination frequency and volume
    - Alteration in mental status, level of consciousness, somnolence, unabated irritability
    - Seizures
    - Initial improvement of symptoms followed by return of fever and worsened cough
    - Deterioration in underlying chronic medical conditions (e.g., heart or lung disease, diabetes mellitus)

- In adults, would include:
  - High or prolonged fever (T > 104 degrees F or T > 101 continuously, unabated, despite acetaminophen or NSAID, for 24 hours)
  - Tachypnea, hyperpnea, dyspnea
  - Pain or pressure in the chest
  - Near-fainting or fainting (syncope)
  - Confusion
  - Severe or persistent vomiting; dehydration.

### Guidance for Dismissal of School and Closure of Child Care Programs

Children suffer from less-well developed, more naïve immune systems, handle secretions less skillfully, and shed virus more readily and abundantly than do their adult counterparts. Children can readily acquire and spread influenza in school and child care settings. Schools and child care may be suspended briefly during a PSI 2 or 3 pandemic, or would almost certainly be suspended for an extended period during a more severe pandemic. MSDH and the Department of Education have worked together to develop guidelines regarding how and when schools would be closed during a pandemic, as well as how and when they would be reopened.

### Community Social Distancing

"Social distancing" is community or sector-level action to restrict or eliminate crowding or, social proximity; examples include school closure, event cancellation, "snow days", priority stratification, and restricted access to mass or public transit.

## H. Distribution of Medical Countermeasures

In the likelihood that an effective vaccine is unavailable, antiviral agents could potentially play a valuable role as the only virus-specific intervention during the initial response to an influenza pandemic.

There are four licensed prescription medications with antiviral activity against influenza viruses that are commercially available in the United States. Based upon pharmacology and antiviral mechanism of action, these four drugs are classified into two categories:

- *Adamantanes* which include amantadine (Symmetrel®) and rimantadine (Flumadine®), and;
- *Neuraminidase inhibitors* which include oseltamivir (Tamiflu®) and zanamivir (Relenza®).

Administration of oseltamivir does not interfere with the development of antibodies to influenza viruses after administration of trivalent inactivated influenza vaccine. Therefore, persons receiving prophylaxis can continue to receive oseltamivir during the period between vaccination and the development of immunity. Whether oseltamivir can interfere with the immune response elicited by a live-attenuated pandemic vaccine is unknown.

Mississippi, through the MSDH SNS Plan, has the capability to distribute on–hand antiviral medications from the Receiving, Staging, and Storage (RSS) site to end-point dispensing sites within 24 hours of notification of need.

- Appropriate use of antiviral agents in treatment and post-exposure prophylaxis during an influenza pandemic may reduce morbidity and mortality and diminish the overwhelming demands that will be placed on the healthcare system. Thus, they may also reduce social disruption and economic loss caused by an influenza pandemic.
- Antivirals might also be used in limited, highly selective (prophylactic) attempts to contain small disease clusters and potentially slow the spread of novel influenza viruses.
- Prioritization within priority groups for treatment will likely be necessary given the limited supply of antivirals.

Policies and statements regarding appropriate use of antivirals, facemasks, respirators, and ventilators may be found in the full Pandemic Influenza Plan and will be updated with evolving medical information on pandemic influenza or with assessment of any interim or emergent Federal guidance.

Distribution of medical countermeasures will be implemented through the MSDH SNS Plan; major players are outlined below:

- RSS Warehouse Facility and Staff: Provide the foundation for all warehouse activities for distribution of medical countermeasures, including receiving, storing, staging and distribution.
- MSDH RSS Team: Process orders for distribution of medical countermeasures; manage Federally received medical countermeasures supply inventory.
- MS Department of Public Safety: Lead agency for security of medical countermeasures during storage at RSS site and during transport from RSS to end recipient.
- MS Military Department: Maintain plans for securing, storing, and transport of medical countermeasures at RSS site and in transit.
- MS Hospital Association: Coordinate hospital preparedness for receiving medical countermeasures during a pandemic; provide Treatment Center Coordinator to the SNS Technical Advisory Unit at the MSDH EOC.

A phased action matrix is also provided in Attachment F.

## Allocation of Antivirals

**Use of antiviral drugs during an influenza pandemic will fall into three categories: pre-exposure prophylaxis, post-exposure prophylaxis, and treatment of influenza illness.** Part 2, Supplement 7, of the HHS plan, addresses these uses of antiviral drugs. Because of the limited global capacity to manufacture antiviral drugs, federal guidance currently emphasizes their use for treatment of influenza illness. In addition, the use of antivirals for prophylaxis will be constrained by increasing risk of side effects with prolonged use and the potential emergence of drug-resistant variants of the pandemic strain, particularly with long-term use of M2 inhibitors (amantadine and rimantadine). Fortunately, the need for

antiviral prophylaxis may decrease once an effective PI vaccine becomes available for use among healthcare workers and other groups receiving prophylactic antivirals.

According to current federal planning guidance, **pre-exposure prophylaxis** would be used primarily in the following three groups:

1 Health care workers in emergency departments, intensive care units, dialysis centers, and EMS providers since these groups are most critical to an effective healthcare response and have limited surge capacity;

2 Outpatients who are in the highest risk groups for hospitalization and death;

3 Other health care workers with direct patient contact to decrease absenteeism and preserve optimal function of the health care system.

**Post-exposure prophylaxis** might be useful in the following settings:

1 Attempts to control small, well-defined disease clusters, for example, outbreaks in long-term care facilities;

2 For the protection of individuals with a known recent exposure to a pandemic virus, for example, household contacts of PI patients.

**Additional consideration regarding the use of antivirals for prophylaxis:**

1 If a pandemic virus is susceptible to M2 ion channel inhibitors, amantadine and rimantadine should be reserved for prophylaxis, although drug resistance may emerge quickly;

2 The number of persons who receive prophylaxis with oseltamivir should be minimized, primarily to extend supplies available to treat persons at highest risk of serious morbidity and mortality. If sufficient antiviral supplies are available, prophylaxis should be used only during peak periods of virus circulation to protect small groups of front-line healthcare workers and other providers of essential community services prior to availability of vaccine;

3 Strategies for antiviral prophylaxis may be revised as the pandemic progresses, depending on supplies, on what is learned about the pandemic strain and on when a vaccine becomes available.

| Table 9 – Antiviral Drug Priority Group Recommendations* | | | | | | |
|---|---|---|---|---|---|---|
| Group | | Estimated Population (millions) | Strategy** | # Courses (millions) | | Rationale |
| | | | | For Target Group | Cumulative | |
| 1 | Patients admitted to hospital*** | 10.0 | T | 7.5 | 7.5 | Consistent with medical practice and ethics to treat those with serious illness and who are most likely to die. |
| 2 | Health care workers (HCW) with direct patient contact and emergency medical service (EMS) providers | 9.2 | T | 2.4 | 9.9 | Healthcare workers are required for quality medical care. There is little surge capacity among healthcare sector personnel to meet increased demand. |
| 3 | Highest risk outpatients—immuno-compromised persons and pregnant women | 2.5 | T | 0.7 | 10.6 | Groups at greatest risk of hospitalization and death; immuno-compromised cannot be protected by vaccination. |
| 4 | Pandemic health responders (public health, vaccinators, vaccine and antiviral manufacturers), public safety (police, fire, corrections), and government decision-makers | 3.3 | T | 0.9 | 11.5 | Groups are critical for an effective public health response to a pandemic. |
| 5 | Increased risk outpatients—young children 12-23 months old, persons >65 yrs old, and persons with underlying medical conditions | 85.5 | T | 22.4 | 33.9 | Groups are at high risk for hospitalization and death. |
| 6 | Outbreak response in nursing homes and other residential settings | NA | PEP | 2.0 | 35.9 | Treatment of patients and prophylaxis of contacts is effective in stopping outbreaks; vaccination priorities do not include nursing home residents. |

| Table 9 – Antiviral Drug Priority Group Recommendations* | | | | | | |
|---|---|---|---|---|---|---|
| Group | | Estimated Population (millions) | Strategy** | # Courses (millions) | | Rationale |
| | | | | For Target Group | Cumulative | |
| 7 | HCWs in emergency departments, intensive care units, dialysis centers, and EMS providers | 1.2 | P | 4.8 | 40.7 | These groups are most critical to an effective healthcare response and have limited surge capacity. Prophylaxis will best prevent absenteeism. |
| 8 | Pandemic societal responders (e.g., critical infrastructure groups as defined in the vaccine priorities) and HCW without direct patient contact | 10.2 | T | 2.7 | 43.4 | Infrastructure groups that have impact on maintaining health, implementing a pandemic response, and maintaining societal functions. |
| 9 | Other outpatients | 180 | T | 47.3 | 90.7 | Includes others who develop influenza and do not fall within the above groups. |
| 10 | Highest risk outpatients | 2.5 | P | 10.0 | 100.7 | Prevents illness in the highest risk groups for hospitalization and death. |
| 11 | Other HCWs with direct patient contact | 8.0 | P | 32.0 | 132.7 | Prevention would best reduce absenteeism and preserve optimal function. |

*The committee focused its deliberations on the domestic U.S. civilian population. NVAC recognizes that Department of Defense (DoD) needs should be highly prioritized. A separate DoD antiviral stockpile has been established to meet those needs. Other groups also were not explicitly considered in deliberations on prioritization. These include American citizens living overseas, non-citizens in the U.S., and other groups providing national security services such as the border patrol and customs service.
**Strategy: Treatment (T) requires a total of 10 capsules and is defined as 1 course. Post-exposure prophylaxis (PEP) also requires a single course. Prophylaxis (P) is assumed to require 40 capsules (4 courses) though more may be needed if community outbreaks last for a longer period.
***There are no data on the effectiveness of treatment at hospitalization. If stockpiled antiviral drug supplies are very limited, the priority of this group could be reconsidered based on the epidemiology of the pandemic and any additional data on effectiveness in this population.

**Definitions and Rationale for Draft Priority Groups may be found in both the MSDH PI Plan and the HHS Plan.**

# I. Public Health Vaccine Preparedness and Response

The overall impact of vaccination during a pandemic depends on how rapidly a PI vaccine becomes available, its effectiveness in preventing infection and disease, its supply, and the ability to allocate and administer it. A limited amount of avian influenza A (H5N1) vaccine is being stockpiled by the Federal government and will be considered for early use in the event of an H5N1 pandemic.

Under current manufacturing processes, a monovalent vaccine directed against the circulating pandemic virus strain of influenza should begin to be available within 4 to 6 months after identification of the new pandemic virus strain. It is also possible that no PI vaccine will be available. Because targeted vaccine will be in short supply, it will be necessary to target initial doses of vaccine to designated groups deemed high-risk and/or to emergency responders. A vaccine against PI will likely require two doses, administered at least a month apart, to provide a level of immunity comparable to that obtained with seasonal influenza vaccines.

Agencies involved in vaccine distribution and vaccine strategy implementation are outlined below:

- **MSDH Department of Pharmacy or RSS Warehouse Facility:** Provide equipment and human resources for receiving, storing, and distribution of pandemic strain vaccine.
- **MSDH Department of Immunizations:** Track vaccine supply and distribution; collect and collate vaccine data from providers; report data to Federal authorities via the Countermeasures and Response Administration (CRA) system.
- **MSDH County and District Health Offices:** Provide human resources for administration of pandemic strain vaccine.
- **MSDH Bureau of Emergency Planning and Preparedness:** Recruit, train, and retain volunteer healthcare professionals via ESAR-VHP to aid in administration of pandemic strain vaccine.
- **MS DPS or MS Military Department:** coordinate security issues during storage, staging, distribution, and administration of pandemic strain vaccine.

A phased action matrix is also provided in Attachment F.

## Plan for Allocation of Vaccine

Estimates of weekly allocation for Mississippi of pandemic strain vaccine were calculated using CDC guidance dated December 11, 2006: Pandemic Influenza Vaccination: A Guide for State, Local, Territorial, and Tribal Planners (Section 1A). Given estimates of weekly allocation and confirmation of capacity by both the MSDH Department of Pharmacy and designated RSS sites for Mississippi to receive and cold store 45,000 pandemic strain vaccines packaged in multi-dose vials, Mississippi will receive pre-pandemic and pandemic strain vaccine centrally for subsequent distribution for administration. Implementation steps for operations of selected sites for vaccine distribution are described in Section VI-I-B.

| Table 11 – Agency Vaccine Preparedness Functions | | | |
|---|---|---|---|
| **Year and Formulation** | **2-Dose Course per Month Manufactured** | **% Population Vaccinated per Month** | **Estimated Weekly Allocation of Vaccine[1]** |
| 2006 | | | |
| 90 mcg/dose | 1.4M | 0.5 | 3,750 |
| 30 mcg/dose | 4.2M | 1.5 | 11,250 |
| 10 mcg/dose | 12.6M | 4.5 | 33,750 |
| 2008 | | | |
| 90 mcg/dose | 5.6M | 2.0 | 15,000 |
| 30 mcg/dose | 16.8M | 6.0 | 45,000 |
| 10 mcg/dose | 50.4M | 18.0 | 135,000 |

Vaccine serves as a primary intervention to decrease the health impacts of influenza and during an influenza pandemic may serve as a tool in disease mitigation, allocation of vaccine was determined for three scenarios.

- Scenario 1: Widespread outbreak in multiple locations overseas; pre-pandemic strain vaccine available, but NO pandemic strain vaccine available.
  - Vaccinate critical infrastructure personnel with pre-pandemic strain vaccine.
  - Verification of critical infrastructure personnel through annually updated roster (and updated upon initial identification of widespread outbreak overseas) and at site through employment badge/MS driver's license.
  - Assumptions:
    - Pre-pandemic strain vaccine confers some immunologic protection against the pandemic strain causing disease;
    - Pre-pandemic strain vaccine will be distributed by CDC at HHS Stage 3; and
    - Critical infrastructure personnel will receive pre-pandemic strain vaccination by pre-determined prioritization.
- Scenario 2: Increased and sustained human-to-human transmission; case (or small cluster) identified in Mississippi [focal point]; pre-pandemic strain vaccine given to critical infrastructure (see above); pandemic strain vaccine available.
  - Isolation and antiviral treatment of cases.
  - Case investigation for contact identification.
  - Quarantine asymptomatic contacts.
  - Vaccinate population in closest proximity in ever widening circles.
  - For those in outer circle(s), use layered and targeted community mitigation/non-pharmaceutical interventions as appropriate for their proximity to case.
  - Assumptions:

[1] Based on vaccine availability assumptions (CDC guidance) and population size for Mississippi [monthly allocation divided by 4; 2-dose courses]

        - Critical infrastructure personnel will have received pre-pandemic strain vaccine;
        - Pandemic vaccine will be available; and
        - Mississippi to receive 45,000 doses per week.
    - Heighten surveillance for disease incidence in critical infrastructure given pre-pandemic strain vaccine (may have to move this group up in priority to receive pandemic strain vaccine).
- Scenario 3: Increased and sustained human-to-human transmission; NO cases in MS OR widespread cases in MS [no focal point]; pre-pandemic strain vaccine given to critical infrastructure (see above), AND pandemic strain vaccine available.
    - Vaccinate by **target group** according to any new Federal guidance.
    - Verification of patients with co-morbid conditions that place at risk for complications of influenza: current medication bottles or valid prescription.
    - Assumptions:
        - Critical infrastructure personnel will have received pre-pandemic strain vaccine;
        - Pandemic vaccine will be available; and
        - MS to receive 45,000 doses per week.
    - Heighten surveillance for disease incidence in critical infrastructure given pre-pandemic strain vaccine (may have to move this group up in priority to receive pandemic strain vaccine).

Using the Vaccination Target Groups as set forth in the Federal Interagency Working Group's Draft Guidance on Allocating and Targeting Pandemic Influenza (October 17, 2007), the Mississippi State Department of Health will quantify persons within these *target* groups. Target groups will enable flexibility in assigning rank or priority to cohorts with similar risk factors deemed highest in regards to evolving epidemiologic data during a PI incident.

**Table 12 – Vaccination Target Groups**

| Tier 1 | Tier 2 | Tier 3 | Tier 4 | Tier 5 | Not Targeted |
|---|---|---|---|---|---|

| Category | Target Group | Estimate Number | Severe | Moderate | Less Severe |
|---|---|---|---|---|---|
| Homeland and National Security | Deployed and mission critical personnel | 700,000 | Tier 1 | Tier 1 | Tier 1 |
| | Essential support & sustainment personnel | 650,000 | Tier 2 | Tier 2 | Tier 2 |
| | Intelligence services | 150,000 | | | |
| | Border protection personnel | 100,000 | | | |
| | National Guard personnel | 500,000 | | | |
| | Other domestic national security personnel | 50,000 | | | |
| | Other active duty & essential support | 1,500,000 | Tier 3 | Tier 3 | Not targeted |
| Health care and Community Support Services | Public health personnel | 300,000 | Tier 1 | Tier 1 | Tier 1 |
| | Inpatient health care providers | 3,200,000 | | | |
| | Outpatient and home health providers | 2,000,000 | | | |
| | Health care providers in Long Term Care Facilities (LTCFs) | 800,000 | | | |
| | Community support & emergency mgt. | 600,000 | Tier 2 | Tier 2 | Not targeted |
| | Other important health care personnel | 500,000 | Tier 3 | Tier 3 | Not targeted |
| Critical Infrastructure | Emergency Medical Service personnel | 2,000,000 | Tier 1 | Tier 1 | Tier 1 |
| | Law enforcement personnel | | | | |
| | Fire services personnel | | | | |
| | Mfrs of pandemic vaccine & antivirals | 50,000 | | | |
| | Key government leaders | 50,000 | | | |
| | Electricity sector personnel | 1,900,000 to 4,400,000 | Tier 2 | Tier 2 | Not targeted |
| | Natural gas personnel | | | | |
| | Communications personnel | | | | |
| | Water sector personnel | | | | |
| | Critical government personnel | | | | |
| | Transportation sector personnel | 1,400,000 to 3,500,000 | Tier 3 | Not targeted | Not targeted |
| | Food and agriculture sector personnel | | | | |
| | Banking and finance personnel | | | | |
| | Pharmaceutical sector personnel | | | | |
| | Chemical sector personnel | | | | |
| | Oil sector personnel | | | | |
| | Postal and shipping personnel | | | | |
| | Other important government personnel | | | | |
| General Population | Pregnant women | 3,100,000 | Tier 1 | Tier 1 | Tier 1 |
| | Infants & toddlers 6–35 mo old | 10,300,000 | | | |
| | Household contacts of infants < 6 mo | 4,300,000 | Tier 2 | Tier 2 | Tier 2 |
| | Children 3–18 yrs with high risk condition | 6,500,000 | | | |
| | Children 3–18 yrs without high risk | 58,500,000 | Tier 3 | Tier 2 | Tier 3 |
| | Persons 19–64 with high risk condition | 36,000,000 | Tier 4 | Tier 3 | Tier 2 |
| | Persons >65 yrs old | 38,000,000 | | | |
| | Healthy adults 19–64 yrs old | 121,800,000 | Tier 5 | Tier 4 | Tier 4 |

**Figure 2 – Vaccination Tiers and Target Groups for a Severe Pandemic**

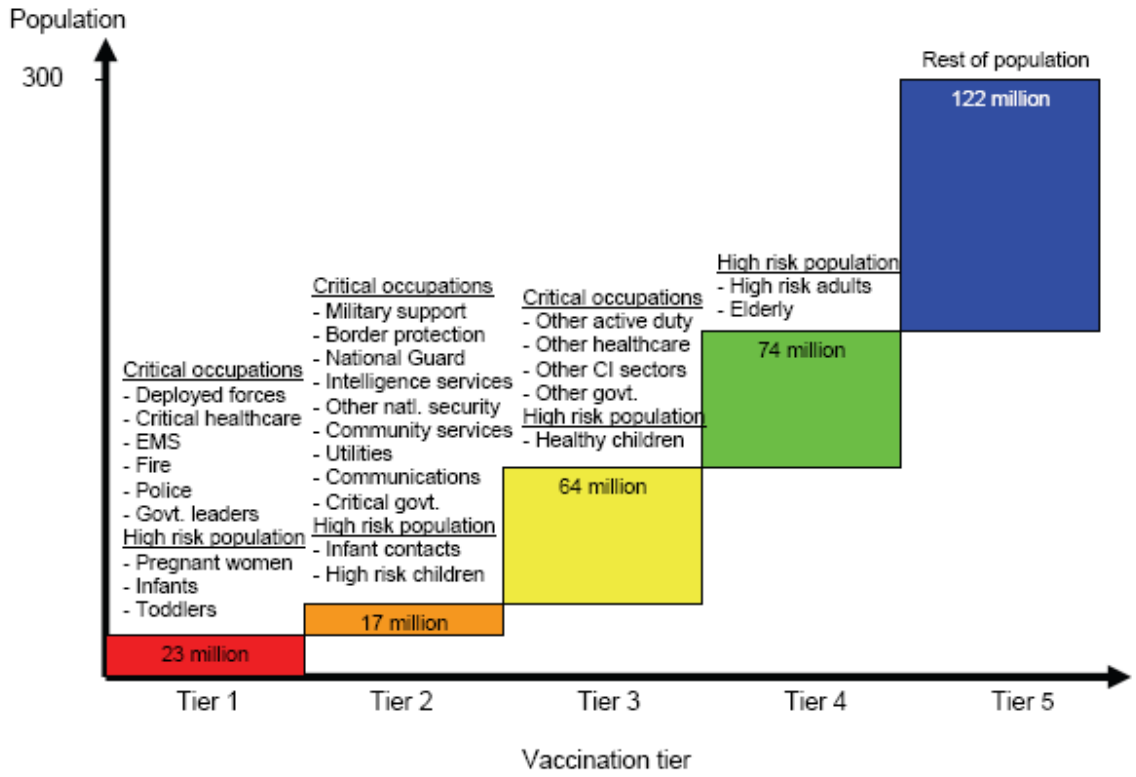



Figure 2 illustrates how vaccination is administered by tiers until the entire U.S. population has had the opportunity to be vaccinated, and how tiers integrate target groups across the four categories balancing vaccine allocation to occupationally defined groups and the general population.

## Operating Sites for Vaccine Receipt/Distribution

**Receipt, Storage and Distribution of Pre-Pandemic Strain and Pandemic Strain Vaccine.** Estimates of weekly allocation for Mississippi of pandemic strain vaccine were calculated using CDC guidance dated December 11, 2006: *Pandemic Influenza Vaccination: A Guide for State, Local, Territorial, and Tribal Planners (Section 1A)* and are outlined in Section "a" above. Mississippi will receive pre-pandemic and pandemic strain vaccine centrally for subsequent distribution for administration.

Distribution of vaccine will follow procedures as set forth within the MSDH SNS Plan. The MSDH SNS Plan identifies staffing for all functions of distribution; details chain of custody; and contains plans for security, credentialing, and communications. Functions are exercised annually, at a minimum, and just-in-time training is facilitated through job action sheets and augmented via routine briefings. To ensure vaccine cold chain is maintained, distribution of vaccine from the MSDH Department of Pharmacy or the RSS site will be

in agency-approved cooler containers or on refrigerated trucks. Agency studies indicate vaccines shipped in cooler containers with ice packs maintain appropriate temperature control for 36 to 48 hours.

**Administration Sites for Pre-Pandemic and Pandemic Strain Vaccine.** Considering data from seasonal influenza clinics, geographic distribution for Mississippi, and estimated weekly allocation of pandemic strain vaccine, need for 12 vaccination teams has been preliminarily determined. Vaccination teams would use operational plans as put forth in the MSDH SNS Plan. Teams could work as individual units to geographically cover all of Mississippi or teams could be combined to be directed at containment strategy.

**Table 13 – Vaccine Administration Site Data**

| Data Point | Conclusion |
|---|---|
| Historical Data/Projections | |
| Data from seasonal flu clinics | Vaccinate ~1000 people / hr<br>Staff requirements: 20 nurses and 20 support staff<br>Clinic runs for about 6 hours |
| Historical data from other outbreaks | Staff requirements generally were 1 support staff per 4 nurses |
| Geographic distribution across state | 9 PH districts<br>Consider extra team more densely populated area (Desoto county, Hinds county and on coast) |
| Estimated weekly allocation of pandemic strain vaccine | Used 45,000 2-dose course / week |
| Resource Calculations | |
| At 1000 vaccinations / hour | Would take 45 hours to administer 45,000 vaccines |
| If worked 6 hour “shifts” | Could administer 45,000 vaccines using about 8 “teams” for an ~6 hour vaccination campaign |
| Staff for 8 teams at requirement of 1 support to 4 nurses | 160 nurses and 40 support persons |
| If we wanted to increase to 12 teams to accommodate geography could we still go with 160 nurses and 40 support persons? | This would make 12 teams of 15 nurses and 3 to 4 support persons (each team administering 3,750 vaccines in ~6 hours); **goal is to recruit a minimum of 180 nurses and optimally ~400 nurses to allow for attrition.** |

The MSDH will utilize PODs for PI vaccination sites. Currently MSDH has MOUs with 142 POD sites and an MOU with the Department of Education authorizing use of public schools as additional POD sites, if necessary. Criteria for POD selection from these sites would be made upon emerging outbreak and include, among other considerations, immediate availability of site, area(s) of case identification, and walking distance for sites located in highly populated areas. Alternate POD sites such as closed PODs,

mobile PODs, and drive-through POD designs are currently being investigated. Case containment strategies could be accomplished utilizing either a stationary POD or mobile POD concepts.

POD operations are conducted under ICS, which include staffing for medical, non-medical, security, transportation, and logistics. Each POD composes a POD Field Operations Guide specifying quantities of personnel required for POD operations, POC, and back-up information. Personnel for medical management positions within the POD have been identified through staff at the MSDH. Each county recruits personnel, including pre-identified volunteers, to support additional operations of the POD. MSDH maintains this roster which includes contact information, professional background, and identifies geographic areas the volunteers have elected to participate.

## Monitoring Vaccine Safety and Efficacy and Reporting Adverse Events

The safety and efficacy of the influenza vaccine will be monitored through proper vaccine storage and administration, timing and spacing of the second influenza dose, observation of precautions and contraindications as identified in the package insert, management of vaccine side effects, reporting of suspected side effects within VAERS, and educating patients and parents about vaccine benefits and risk.

**Influenza Vaccine Storage and Administration.** To ensure the safety of the influenza vaccine, the vaccine administrators will inspect vaccine upon delivery and monitor the refrigerator to ensure the maintenance of cold chain, draw up vaccine into syringes only prior to administration, rotate the vaccine stock to ensure vaccine is used within the appropriate date, and record appropriate administration information (i.e. site of administration, Lot Number, etc.)

**Timing and Spacing.** The second influenza dose will be administered no sooner than the spacing time identified in the influenza vaccine package insert.

**Contraindications and Precautions.** Each recipient of the flu vaccine will be screened prior to administration of the vaccine.

**Managing Vaccine Side Effects.** Protocol as identified in the Mississippi State Department of Health Public Health Nursing manual will be used in the event of an anaphylactic reaction. Emergency bag(s) containing Epinephrine and equipment for airway management will be readily available at each administration site.

**Reporting Adverse Reactions.** The National Childhood Vaccine Injury Act of 1986 mandated that healthcare providers who administer vaccines and licensed vaccine manufacturers report certain adverse health events following specific vaccinations. The Vaccine Adverse Event Reporting System (VAERS) is a national reporting system jointly administered by CDC and FDA. The Reportable Events Table (RET) reflects what is reportable by law (42USC 300aa-25) to the Vaccine Adverse Event Reporting System (VAERS) including conditions found in the manufacturers package insert. In addition, individuals are encouraged to report any clinically significant or unexpected event (even if the individual is not certain the vaccine caused the event) for any vaccine, whether or not it is listed on the RET. Manufacturers are also required by regulation (21CFR600.80) to report to the VAERS program all adverse events made known to

them for any vaccine. This table may be found at the following web site: https://secure.vaers.org/VaersHelp.html

## J. Mass Fatality Management

Reference Functional Annex 4.0, Mass Fatality Plan

# ATTACHMENTS

Attachment C – Estimating the Potential Impact of PI on the State of Mississippi

Attachment E – WHO Pandemic Phases and HHS USG Response Stages

Attachment F – Phased Action Matrix

# Attachment C – Estimating the Potential Impact of PI on the State of Mississippi

### Background and Purpose

FluAid 2.0, produced by the Centers for Disease Control and Prevention (CDC), provides estimates of the total numbers of deaths, hospitalizations, and outpatient visits *before* interventions are applied. FluSurge 2.0 (CDC) compares the number of persons hospitalized, the number of persons requiring intensive care unit (ICU) care, and the number of persons requiring ventilator support during a pandemic with existing hospital capacity. The illustrations of the potential impact of the next influenza pandemic contained in this report are intended to help Mississippi's public health officials and policy makers plan, prepare and practice for the next influenza pandemic.

**Table C1 – Persons Considered High Risk for Complications due to Influenza (ACIP)**

- Persons aged 65 or older
- Residents of nursing homes or other chronic care facilities that house person with chronic medical conditions
- Adults and children who have chronic disorders of the pulmonary or cardiovascular systems, including those with asthma
- Adults and children who require regular medical follow-up or hospitalization because of chronic metabolic disease (including diabetes mellitus), renal dysfunction, hemoglobinopathies, or immunosuppression (inducing immunosuppresion caused by medications)
- Children and teenagers (aged 6 months to 18 years) who are receiving long-term aspirin therapy and therefore might be at risk for Reye syndrome after influenza
- Women who will be in the second or third trimester of pregnancy during the influenza season

**Table C2 – FluAid 2.0 High Risk Percentages by Age Group**

| Age (years) | Percentage (%) |
|---|---|
| 0-18 | 6.4 |
| 19-64 | 14.4 |
| 65 or greater | 40 |

**Table C3 – FluAid 2.0 Death Rates per 1,000 by Age and Risk Group**

| Risk/Age | 1968-type scenario | | | 1918-type scenario | | |
|---|---|---|---|---|---|---|
| | Minimum | Mean (Most Likely) | Maximum | Minimum | Mean (Most Likely) | Maximum |
| High Risk | | | | | | |
| 0-18 years | 0.126 | 0.220 | 7.65 | 1.036 | 1.808 | 62.883 |
| 19-64 years | 0.100 | 2.910 | 5.72 | 0.822 | 23.920 | 47.018 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 64 + years | 2.760 | 4.195 | 5.63 | 22.687 | 34.483 | 46.279 |
| Non-High Risk | | | | | | |
| 0-18 years | 0.014 | 0.024 | 0.125 | 0.115 | 0.197 | 1.028 |
| 19-64 years | 0.025 | 0.037 | 0.090 | 0.206 | 0.304 | 0.740 |
| 65 + years | 0.280 | 0.420 | 0.540 | 2.302 | 3.452 | 4.439 |

**Table C4 – FluAid 2.0 Hospitalization Rates per 1,000 by Age and Risk Group**

| Risk/Age | 1968-type scenario | | | 1918-type scenario | | |
|---|---|---|---|---|---|---|
| | Minimum | Mean (Most Likely) | Maximum | Minimum | Mean (Most Likely) | Maximum |
| High Risk | | | | | | |
| 0-18 years | 2.10 | 2.90 | 9.00 | 17.262 | 23.838 | 73.980 |
| 19-64 years | 0.83 | 2.99 | 5.14 | 6.823 | 24.578 | 42.251 |
| 64 + years | 4.00 | 8.50 | 13.00 | 32.880 | 69.870 | 106.86 |
| Non-High Risk | | | | | | |
| 0-18 years | 0.20 | 0.50 | 2.90 | 1.644 | 4.110 | 23.838 |
| 19-64 years | 0.18 | 1.465 | 2.75 | 1.480 | 12.042 | 22.605 |
| 65 + years | 1.5 | 2.25 | 3.00 | 12.330 | 18.495 | 24.66 |

**Table C5 – FluAid 2.0 Outpatient Visits per 1,000 by Age and Risk Group (1968 scenario*)**

| Risk/Age | Minimum | Mean (Most Likely) | Maximum |
|---|---|---|---|
| High Risk | | | |
| 0-18 years | 289 | 346 | 403 |
| 19-64 years | 70 | 109.5 | 149 |
| 65 + years | 79 | 104.5 | 130 |
| Non-High Risk | | | |
| 0-18 years | 165 | 197.5 | 230 |
| 19-64 years | 40 | 62.5 | 85 |
| 65 + years | 45 | 59.5 | 74 |

**Table C6 – Methodology for Calculation Outpatient Visits for a 1918-Type Scenario**

1. Total number of symptomatic cases, by age group were calculated: total population in age group x gross clinical attack rate of 25%
2. Residual total number of outpatients plus those ill, but who seek no medical care was calculated: total number of outpatients + ill, no medical care = total symptomatic cases – deaths – hospitalizations.
3. It is assumed that 50% of total number of outpatients plus those ill, but who seek no medical care will contribute to outpatient visits.

| Table C7 – Underlying Assumptions within FluSurge 2.0 | |
|---|---|
| **Parameter** | **Measure** |
| Average length of non-ICU hospital stay for influenza-related illness | 5 days |
| Average length of ICU stay for influenza-related illness | 10 days |
| Average proportion of admitted patients needing ICU care | 15% |
| Average proportion of influenza deaths assumed to be hospitalized | 70% |
| Daily percentage increase in cases arriving compared to previous day | 3% |

| Table C8 – FluAid 2.0 Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi Counties (1968-like scenario) | | | |
|---|---|---|---|
| **County** | **Deaths** | **Hospitalizations** | **Outpatient Visits** |
| Adams | 23 | 97 | 4302 |
| Alcorn | 26 | 108 | 4715 |
| Amite | 10 | 42 | 1794 |
| Attala | 15 | 59 | 2618 |
| Benton | 5 | 24 | 1053 |
| Bolivar | 23 | 106 | 5203 |
| Calhoun | 11 | 46 | 1958 |
| Carroll | 7 | 32 | 1385 |
| Chickasaw | 13 | 55 | 2580 |
| Choctaw | 7 | 29 | 1282 |
| Claiborne | 6 | 31 | 1549 |
| Clarke | 12 | 53 | 2367 |
| Clay | 14 | 62 | 2849 |
| Coahoma | 17 | 76 | 3930 |
| Copiah | 19 | 83 | 3918 |
| Covington | 14 | 59 | 2723 |
| Desoto | 80 | 372 | 18387 |
| Forrest | 49 | 215 | 10060 |
| Franklin | 7 | 25 | 1125 |
| George | 13 | 59 | 2858 |
| Greene | 8 | 38 | 1759 |
| Grenada | 16 | 68 | 3064 |
| Hancock | 34 | 143 | 6241 |
| Harrison | 125 | 551 | 26003 |
| Hinds | 152 | 683 | 33540 |
| Holmes | 13 | 55 | 2856 |
| Humphreys | 6 | 29 | 1424 |
| Issaquena | 1 | 6 | 255 |
| Itawamba | 16 | 70 | 3127 |

| Table C8 – FluAid 2.0 Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi Counties (1968-like scenario) | | | |
|---|---|---|---|
| **County** | **Deaths** | **Hospitalizations** | **Outpatient Visits** |
| Jackson | 87 | 385 | 18229 |
| Jasper | 12 | 53 | 2437 |
| Jefferson | 6 | 26 | 1267 |
| Jeff Davis | 9 | 39 | 1765 |
| Jones | 45 | 196 | 8866 |
| Kemper | 7 | 30 | 1373 |
| Lafayette | 26 | 117 | 5451 |
| Lamar | 25 | 122 | 5986 |
| Lauderdale | 54 | 225 | 10370 |
| Lawrence | 9 | 39 | 1809 |
| Leake | 14 | 63 | 3024 |
| Lee | 51 | 224 | 10575 |
| Leflore | 23 | 100 | 4911 |
| Lincoln | 23 | 100 | 4540 |
| Lowndes | 38 | 168 | 8050 |
| Madison | 51 | 232 | 11320 |
| Marion | 18 | 74 | 3387 |
| Marshall | 22 | 101 | 4783 |
| Monroe | 26 | 114 | 5047 |
| Montgomery | 9 | 37 | 1585 |
| Neshoba | 20 | 84 | 4021 |
| Newton | 15 | 66 | 3006 |
| Noxubee | 8 | 34 | 1644 |
| Oktibbeha | 25 | 117 | 5507 |
| Panola | 22 | 99 | 4751 |
| Pearl River | 35 | 154 | 7054 |
| Perry | 8 | 35 | 1632 |
| Pike | 26 | 114 | 5300 |
| Pontotoc | 19 | 82 | 3779 |
| Prentiss | 18 | 76 | 3427 |
| Quitman | 6 | 26 | 1283 |
| Rankin | 82 | 371 | 17634 |
| Scott | 19 | 81 | 3862 |
| Sharkey | 4 | 16 | 805 |
| Simpson | 19 | 80 | 3752 |
| Smith | 11 | 47 | 2153 |
| Stone | 10 | 42 | 1995 |
| Sunflower | 18 | 88 | 4343 |
| Tallahatchie | 9 | 41 | 1909 |

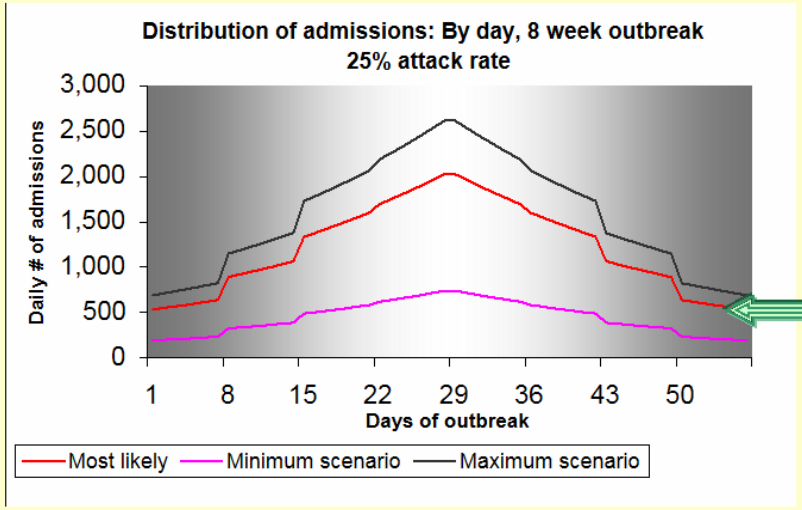
| Table C8 – FluAid 2.0 Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi Counties (1968-like scenario) | | | |
|---|---|---|---|
| **County** | **Deaths** | **Hospitalizations** | **Outpatient Visits** |
| Tate | 17 | 75 | 3568 |
| Tippah | 15 | 64 | 2837 |
| Tishomingo | 15 | 61 | 2560 |
| Tunica | 6 | 27 | 1393 |
| Union | 18 | 78 | 3586 |
| Walthall | 11 | 46 | 2076 |
| Warren | 31 | 138 | 6605 |
| Washington | 36 | 160 | 7992 |
| Wayne | 13 | 60 | 2858 |
| Webster | 8 | 31 | 1351 |
| Wilkinson | 7 | 30 | 1375 |
| Winston | 15 | 61 | 2662 |
| Yalobusha | 10 | 41 | 1797 |
| Yazoo | 18 | 80 | 3786 |
| **Totals** | **1891** | **8326** | **392003** |
| **Statewide Estimates** | **1902** | **8323** | **392010** |

| Table C9 – Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi, 1918-like scenario | | | |
|---|---|---|---|
| County | Deaths | Hospitalizations | Outpatient Visits |
| Adams | 195 | 801 | 3514 |
| Alcorn | 213 | 890 | 3861 |
| Amite | 84 | 343 | 1465 |
| Attala | 120 | 493 | 2168 |
| Benton | 47 | 194 | 860 |
| Bolivar | 192 | 862 | 4302 |
| Calhoun | 92 | 375 | 1597 |
| Carroll | 63 | 263 | 1135 |
| Chickasaw | 105 | 452 | 2119 |
| Choctaw | 58 | 240 | 1047 |
| Claiborne | 57 | 256 | 1278 |
| Clarke | 106 | 438 | 936 |
| Clay | 117 | 505 | 2341 |
| Coahoma | 143 | 630 | 3238 |
| Copiah | 158 | 684 | 3233 |
| Covington | 113 | 483 | 2237 |
| Desoto | 659 | 3066 | 15263 |
| Forrest | 397 | 1763 | 8307 |
| Franklin | 50 | 211 | 921 |
| George | 107 | 481 | 2363 |
| Greene | 69 | 311 | 1458 |
| Grenada | 132 | 557 | 2513 |
| Hancock | 279 | 1168 | 5115 |
| Harrison | 1031 | 4530 | 21447 |
| Hinds | 1248 | 5621 | 27734 |
| Holmes | 105 | 460 | 2355 |
| Humphreys | 53 | 233 | 1173 |
| Issaquena | 10 | 46 | 211 |
| Itawamba | 133 | 568 | 2569 |
| Jackson | 710 | 3160 | 15058 |
| Jasper | 104 | 439 | 1999 |
| Jefferson | 46 | 213 | 1050 |
| Jeff Davis | 75 | 318 | 1449 |
| Jones | 378 | 1605 | 7278 |
| Kemper | 59 | 250 | 1126 |
| Lafayette | 212 | 966 | 4517 |
| Lamar | 216 | 1002 | 4968 |

| Table C9 – Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi, 1918-like scenario | | | |
|---|---|---|---|
| **County** | **Deaths** | **Hospitalizations** | **Outpatient Visits** |
| Lauderdale | 439 | 1853 | 5984 |
| Lawrence | 77 | 326 | 1487 |
| Leake | 123 | 525 | 2483 |
| Lee | 418 | 1837 | 8722 |
| Leflore | 185 | 818 | 4052 |
| Lincoln | 193 | 824 | 3730 |
| Lowndes | 315 | 1381 | 6690 |
| Madison | 414 | 1898 | 9380 |
| Marion | 144 | 607 | 2631 |
| Marshall | 186 | 829 | 3950 |
| Monroe | 222 | 932 | 4122 |
| Montgomery | 74 | 300 | 1292 |
| Neshoba | 163 | 699 | 3307 |
| Newton | 131 | 544 | 2458 |
| Noxubee | 65 | 280 | 1352 |
| Oktibbeha | 207 | 959 | 4573 |
| Panola | 184 | 812 | 3919 |
| Pearl River | 291 | 1259 | 5808 |
| Perry | 65 | 284 | 1345 |
| Pike | 225 | 942 | 4400 |
| Pontotoc | 154 | 671 | 3113 |
| Prentiss | 150 | 630 | 2809 |
| Quitman | 50 | 218 | 1055 |
| Rankin | 668 | 3057 | 14618 |
| Scott | 154 | 671 | 3180 |
| Sharkey | 30 | 134 | 664 |
| Simpson | 152 | 658 | 3088 |
| Smith | 91 | 388 | 1768 |
| Stone | 78 | 343 | 1648 |
| Sunflower | 153 | 713 | 3605 |
| Tallahatchie | 77 | 331 | 1571 |
| Tate | 139 | 611 | 2942 |
| Tippah | 123 | 521 | 2330 |
| Tishomingo | 124 | 503 | 2087 |
| Tunica | 49 | 223 | 1155 |
| Union | 151 | 648 | 2949 |
| Walthall | 90 | 375 | 1700 |
| Warren | 255 | 1127 | 5450 |

| Table C9 – Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi, 1918-like scenario | | | |
|---|---|---|---|
| **County** | **Deaths** | **Hospitalizations** | **Outpatient Visits** |
| Washington | 298 | 1320 | 6594 |
| Wayne | 114 | 499 | 2355 |
| Webster | 63 | 256 | 1102 |
| Wilkinson | 58 | 248 | 1131 |
| Winston | 120 | 496 | 2176 |
| Yalobusha | 80 | 333 | 1471 |
| Yazoo | 148 | 653 | 3124 |
| **Totals** | **15626** | **68413** | **319575** |
| **Statewide Estimates** | **15635** | **68416** | **323110** |

## Table C10 – FluSurge 2.0 Comparison of Number of Persons Hospitalized, Requiring Intensive Care Unit (ICU) Care and Ventilator Support During a Pandemic with Existing Hospital Capacity




| | |
|---|---|
| Total Hospital Admissions (most likely) | 68,416 |
| Total Deaths (most likely) | 15,635 |

| Pandemic Influenza Impact / Weeks | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hospital Admission | Weekly admissions | 4,105 | 6,842 | 10,262 | 12,999 | 12,999 | 10,262 | 6,842 | 4,105 | | |
| | Peak admissions/day | | | | 2,026 | 2,026 | | | | | |
| Hospital Capacity | # of influenza patients in hospital | 3,017 | 5,029 | 7,544 | 9,555 | 9,894 | 8,697 | 6,669 | 4,375 | | |
| | % of hospital capacity needed | 29% | 48% | 73% | 92% | 95% | 84% | 64% | 42% | | |
| ICU Capacity | # of influenza patients in ICU | 616 | 1,306 | 2,005 | 2,649 | 2,867 | 2,789 | 2,216 | 1,530 | | |
| | % of ICU capacity needed | 71% | 151% | 232% | 306% | 331% | 322% | 256% | 177% | | |
| Ventilator Capacity | # of influenza patients on ventilators | 308 | 653 | 1,003 | 1,324 | 1,433 | 1,394 | 1,108 | 765 | | |
| | % usage of ventilator | 45% | 96% | 148% | 195% | 211% | 206% | 163% | 113% | | |
| Deaths | # of deaths from influenza | | | 938 | 1,564 | 2,345 | 2,971 | 2,971 | 2,345 | 1,564 | 938 |
| | # of influenza deaths in hospital | | | 657 | 1,094 | 1,642 | 2,079 | 2,079 | 1,642 | 1,094 | 657 |

Notes: 1. All results showed in this table are based on most likely scenario.
2. Number of influenza patients in hospital, in ICU, and number of influenza patients on ventilators are based on maximum daily number in a relevant week.
3. Hospital capacity used, ICU capacity used, and % usage of ventilator are calculated as a percentage of total capacity available (see manual for details).
4. The maximum number of influenza patients in the hospital each week is lower than the number of weekly admissions because we assume a 5-day stay in general wards (see manual for details).

## Attachment E – WHO Pandemic Phases and HHS USG Response Stages

PANDEMIC INFLUENZA

### WHO Global Pandemic Phases and the Stages for Federal Government Response

| WHO Phases | | Federal Government Response Stages | |
|---|---|---|---|
| **INTER-PANDEMIC PERIOD** | | | |
| 1 | No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human disease is considered to be low. | 0 | New domestic animal outbreak in at-risk country |
| 2 | No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease. | | |
| **PANDEMIC ALERT PERIOD** | | | |
| 3 | Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact. | 0 | New domestic animal outbreak in at-risk country |
| | | 1 | Suspected human outbreak overseas |
| 4 | Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans. | 2 | Confirmed human outbreak overseas |
| 5 | Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk). | | |
| **PANDEMIC PERIOD** | | | |
| 6 | Pandemic phase: increased and sustained transmission in general population. | 3 | Widespread human outbreaks in multiple locations overseas |
| | | 4 | First human case in North America |
| | | 5 | Spread throughout United States |
| | | 6 | Recovery and preparation for subsequent waves |

# Attachment F – Phased Action Matrix

| | Public Health Command and Control | Epidemiology and Lab Surveillance | Vaccine Preparedness and Response | Medical Countermeasures | Public Information | Community Mitigation / Non-pharmaceutical Interventions |
|---|---|---|---|---|---|---|
| **Interpandemic Period**<br>**WHO Phases 1 and 2: Influenza subtype in animals that may pose risk of human disease**<br>**HHS Stage 0: New domestic animal outbreak in at-risk country** | Define intra-agency roles in pandemic influenza planning and response | Continue virologic and sentinel provider surveillance | Increase vaccine acceptability through public education targeted at familiarizing people with the safety profile and benefits of vaccination | Antivirals will not be distributed or administered for pandemic purposes during this period | Identify a Public Information Team to develop key information materials and review, revise, adapt, and distribute CDC materials as needed | Identify and engage public health, state and local governmental agencies, nongovernmental agencies, Mississippi tribes, faith-based communities, and other community stakeholders in non-pharmaceutical interventions preparedness planning and containment exercises |
| | Clarify contacts in and establish liaisons between MSDH and partner agencies | Establish deadlines for implementation and production of electronic syndromic surveillance | Enhance levels of seasonal influenza vaccination and pneumococcal polysaccharide vaccination | Review national recommendations for priority groups and developing state-specific modifications or refinements in priority groups | Identify and train spokespersons (and backups) to work with the media and provide information to the public | Spearhead planning activities with its partners to address potential cascading effects as unintended consequence of the use of non-pharmaceutical interventions |
| | Establish and/or clarify roles and responsibilities of MSDH and partner agencies during pandemic influenza planning and response | Develop protocols for monitoring influenza related deaths and hospitalizations | Develop strategies for vaccinating hard-to-reach populations | Review, exercise, and modify medical countermeasures distribution plans on a periodic basis and as needed. | Identify the most effective communications channels for reaching different communities | Develop policy guidance and/or procedures |
| | Train MSDH personnel in ICS and NIMS | Develop augmentation and surge capacity to rapidly test specimens for influenza and agents causative of community-acquired pneumonia | Develop a system to report and investigate adverse events following immunization | | Develop a plan to educate public health officials, elected and appointed officials, and the media | Community and workplace-specific use of personal protective equipment |
| | Conduct exercises to prepare MSDH and partner agencies and to identify and address any deficiencies | Coordinate surveillance and reporting of animal influenza illness between MSDH and MS Department of Agriculture | | | Develop a plan for coordination of messages between state and local public health officials, and all involved partners | Medical evacuation, care, maintenance, and monitoring of persons, self- or professionally designated to isolation or quarantine |
| | Review and revise pandemic influenza plan annually | | | | Develop a plan to educate stakeholders throughout the community | Safe home management of ill persons, with inclusion of information for persons who live alone and may be unable to care for themselves if ill |
| | | | | | | Investigate resources for provision of medical care, mental care, food, and services to persons in isolation and quarantine as well as other affected persons |

| Pandemic Alert Period<br>WHO Phase 3: Novel influenza virus identified but virus not well adapted to humans<br>HHS Stage 0: New domestic animal outbreak in at-risk country | Command and Control | Surveillance | Vaccine Distribution and Use | Medical Countermeasures | Public Information | Community Mitigation / Non-pharmaceutical Interventions |
|---|---|---|---|---|---|---|
| | MSDH Legal Office to appraise legal issues that can affect planning, operations, healthcare staffing, and patient care | MS Department of Agriculture with the State Veterinarian's Office will advise MSDH of outbreaks of animal illness that can affect humans | Develop plan for distribution of pre-pandemic strain vaccine and pandemic strain vaccine | Review national recommendations for priority groups for antivirals and develop state-specific modifications or refinements for target groups. | Create, review, and refine educational materials regarding the need for target groups for antivirals and the rationale for the groups currently recommended. | Spearhead planning activities with the education sector |
| | | Develop plan for surveillance at ports, airports, and border jurisdictions | Coordinate the vaccine distribution plan with neighboring states and Mississippi tribes | Develop specific definitions for target groups for antivirals, identifying occupational categories and sub-categories, as needed, within each broad target and estimating the size of relevant target groups. | Create, review, and refine educational materials regarding the need for target groups for vaccine and the rationale for the groups currently recommended. | Spearhead planning activities with the workplace and business sectors |
| | | Develop policies and procedures for travel risks | Implement a call-back system or immunization registry | Develop plan for distribution of antivirals, facemasks and respirators, and ventilators | Create, review, and refine educational materials for use of facemasks | |
| | | | Develop a system to report and investigate adverse events following immunization with a pandemic influenza vaccine. | Develop a system to report and investigate adverse events following administration of antiviral medications. | Develop a plan to activate the hot line and Web site to respond to pandemic inquiries | |

| Pandemic Alert Period<br>WHO Phase 3: Novel influenza virus identified but virus not well adapted to humans<br>HHS Stage 1: Suspected human outbreak overseas | Command and Control | Surveillance | Vaccine Distribution and Use | Medical Countermeasures | Public Information | Community Mitigation / Non-pharmaceutical Interventions |
|---|---|---|---|---|---|---|
| | Notification of a credible threat, a potential emerging emergency or actual event of significance | Update public health and healthcare providers of the region(s) where the novel influenza virus has been detected | Review the major elements of the plan for mass vaccination with partners and stakeholders | Review the major elements of the plan for distribution of medical countermeasures. | Review CDC materials and adapt, revise, and distribute as needed. | Meet with partners and stakeholders to review major elements of non-pharmaceutical interventions and community mitigation measures |
| | DHP to provide situational update to Core Notification Response Staff | Prepared to implement screening and/or travel restrictions from affected area | Update plan for mass vaccination to account for federal interim recommendations on priority groups, projected vaccine supplies, and timelines for availability | Modify plan for distribution of antivirals to account for possible updated Federal interim recommendations on priority groups, projected antiviral supplies, and timelines for availability. | Provide the most up-to-date information to public, medical community, and stakeholders | Advocate/encourage infection control practices such as good hand hygiene and cough etiquette |
| | DHP to provide status updates of activities to the SHO | | Provide medical community and other stakeholders with most up-to-date information, including expected availability of vaccine | Provide the most up-to-date information to the medical community and other stakeholders regarding antivirals, facemasks, respirators and ventilators. | | Coordinate with businesses engaged in transportation or travel, bordering jurisdictions and Mississippi tribes |
| | Novel virus alert to be issued to public health and medical entities via HAN | | Conduct training, if necessary, for those involved in distributing and administering vaccine | Conduct training for public health staff and partners involved in distributing and administering antivirals, and ensure redundancy of knowledge and responsibility for pandemic activities. | | |

**Pandemic Alert Period**
**WHO Phases 4 or 5: Small cluster(s) of human-to-human transmission but virus not well adapted to humans OR virus is becoming increasingly better adapted to humans**
**HHS Stage 2: Confirmed human outbreak overseas**

| Command and Control | Surveillance | Vaccine Distribution and Use | Medical Countermeasures | Public Information | Community Mitigation / Non-pharmaceutical Interventions |
|---|---|---|---|---|---|
| Notification of a credible threat, a potential emerging emergency or actual event of significance | Update public health and healthcare providers of the region(s) where the novel influenza virus has been detected | Review major elements of plan for mass vaccination with partners and stakeholders | Review the major elements of the plan for distribution of medical countermeasures | Review CDC materials and adapt, revise, and distribute as needed | Review all CDC guidance on the Pandemic Severity Index |
| Possible transition to a coordinated agency emergency response operation by the MSDH EOC (Level III or IV) | Distribute updated recommendations to healthcare providers | Update plan for mass vaccination to account for federal interim recommendations on priority groups, projected vaccine supplies, and timelines for availability | Update plan for distribution of antivirals to account for possible updated federal interim recommendations on priority groups, projected antiviral supplies, and timelines for availability | Implement risk communications plan. | Review any updated Federal interim recommendations on non-pharmaceutical interventions and community mitigation measures |
| The MSDH will name an Incident Commander as well as a liaison and serve as the focal point for coordinating MSDH response activities with MEMA. | Request enhanced influenza surveillance activities (public health and private health care), including veterinary surveillance | Provide medical community and other stakeholders with most up-to-date information, including expected availability of vaccine | Review current CDC prophylaxis and treatment guidelines for antivirals and determine options for antiviral use | If JIC is established, ensure proper representation of ESF 8 is available | Meet with partners and stakeholders to review major elements of non-pharmaceutical interventions and community mitigation measures |
| Novel virus alert to be issued to public health and medical entities via HAN | Request immediate notification from healthcare providers upon suspicion of a human case of infection with an avian or animal strain of influenza or with any other novel human influenza strain | Conduct training, if necessary, for public health staff and partners involved in distributing and administering vaccines | Provide the most up-to-date information to the medical community and other stakeholders regarding antivirals, facemasks, respirators and ventilators. | Coordinate pubic information with neighboring states and Mississippi Tribes | Coordinate with businesses engaged in transportation or travel, bordering jurisdictions and Mississippi tribes regarding non-pharmaceutical interventions |
| | Report to CDC any influenza cases that test positive for a novel influenza subtype or meet the enhanced surveillance case definition | The Operations Section Chief will notify POD Strike Team Leads to place POD Teams on Alert. | The Operations Section Chief will place the RSS Team on Alert or Stand-by status, as the situation dictates. | | For the most severe pandemics (Categories 4 and 5; see Attachment E), the MSDH CC will notify critical systems and personnel of impending activation |

| Pandemic Period<br>WHO Phase 6: Increased and sustained human transmission in the general public<br>HHS Stage 3: Widespread human outbreaks in multiple locations overseas | Command and Control | Surveillance | Vaccine Distribution and Use | Medical Countermeasures | Public Information | Community Mitigation / Non-pharmaceutical Interventions |
|---|---|---|---|---|---|---|
| | MSDH EOC activities to a Level III response | Continue enhanced surveillance activities | If pre-pandemic vaccine is available in large quantities, begin call-down to ensure that human resources and logistics are in place to begin vaccination | Modify the plan for distribution of antivirals to account for possible updated Federal interim recommendations on priority groups, projected antiviral supplies, and timelines for availability. | Review CDC materials and adapt, revise, and distribute as needed | utilize the key steps in escalation of response as outlined by the Federal government, incorporating information from the Pandemic Severity Index and U.S. Government Stage |
| | Review all applicable plans | Establish regular communication with the MHA and sentinel physicians to receive reports and discuss status of isolation capacity and overall bed capacity of hospitals and other healthcare facilities | Review HHS guidance for pre-pandemic vaccine and make recommendations and advise Governor as appropriate | If large quantities of antivirals are available, begin call-down to ensure that human resources and logistics are in place to begin distribution of antivirals | Implement risk communications plan. | notify stakeholders, neighboring states, and Mississippi Tribes of Pandemic Severity Index and review non-pharmaceutical interventions and community mitigation strategies, including triggers |
| | Inventory antiviral supplies and other essential medications throughout the state | Implement expanded laboratory surveillance | Prepare to vaccinate using pre-pandemic vaccine | Notify the medical community about the status of the plan and the expected availability of antivirals and medical countermeasures. | If JIC is established, ensure proper representation of ESF 8 is available | Critical systems and personnel will be placed on Alert Status with notification of impending activation of non-pharmaceutical interventions and community mitigation strategies |
| | Convene with the Office of the Governor | | Request MHRTs and District Health Officers to arrange for operations of PODs for pre-pandemic vaccine administration | Provide individual providers and other stakeholders with most up-to-date information | JIC to disseminate information to public, partners, and the media on an ongoing basis according to risk communication plan. | |
| | Notify key officials and emergency management of need for additional resources, if necessary | | Place POD Operations Managers on Alert | Depending on availability of pre-pandemic strain vaccine, antivirals and medical countermeasures, RSS Team will be placed on Stand-by or Active Status | JIC to monitor media coverage and address misinformation | |
| | MSDH to coordinate with bordering jurisdictions and Mississippi tribes. | | Depending on availability of pre-pandemic strain vaccine, POD Teams will be placed on Stand-by or Active Status. | | Coordinate public information with neighboring states and MS Tribes | |

| Pandemic Period | Command and Control | Surveillance | Vaccine Distribution and Use | Medical Countermeasures | Public Information | Community Mitigation / Non-pharmaceutical Interventions |
|---|---|---|---|---|---|---|
| WHO Phase 6: Increased and sustained human transmission in the general public<br>HHS Stage 4 or 5: First human case in North America OR Spread throughout United States | Upgrade MSDH EOC to a Level II or Level I response | Evaluate surveillance data for trends and public health impact | Update standing orders for pandemic influenza vaccine administration based on any new recommendation from the Federal government | Update Standing Orders for administration of antivirals for pandemic influenza based on any new recommendation from the Federal government, as needed. | Request operations of JIC, if not already established | Update stakeholders, neighboring states, and Mississippi Tribes of Pandemic Severity Index and review non-pharmaceutical interventions and community mitigation strategies, including triggers |
| | Review and fully activate all applicable plans | Monitor health trends in persons receiving pre-pandemic strain vaccine | Obtain Vaccine Information Statement from the CDC | Confer with the CDC on the number of antiviral regimens Mississippi will receive and date of receipt | JIC to disseminate information to public, partners, and the media on an ongoing basis according to risk communication plan. | Depending on Pandemic Severity Index, critical systems and personnel will be placed on Standby or Active Status for implementing non-pharmaceutical interventions and community mitigation strategies |
| | Establish additional support cells for the purpose of coordinating activities WHO 6/ HHS 4 activity | Monitor Community impacts (e.g., absenteeism in business and school sectors) | Confer with the CDC on the number of pandemic influenza vaccine doses Mississippi will receive and date of receipt | Fully activate the plan for distribution of antivirals | JIC to monitor media coverage and address misinformation | |
| | MSDH EOC will coordinate response with neighboring states and Mississippi Tribes | Provide mortality data as requested by the CDC | Fully activate the plan for vaccination | Activate RSS for distribution of medical countermeasures and vaccine | The JIC will continue to disseminate credible information as it becomes available to the public and all partners | |
| | | Consider community containment options recommended and advise the Governor | Activate PODs for distribution of pre-pandemic strain and pandemic strain vaccine depending on availability of product | Monitor of drug use, drug-related adverse events, and drug resistance. | Coordinate public information with neighboring states and MS Tribes | |
| | | Activate plans for laboratory surge capacity | | | | |
| | | Provide clinical laboratory guidance for local healthcare providers | | | | |
| | | Submit specimens to the CDC | | | | |

| | Command and Control | Surveillance | Vaccine Distribution and Use | Antiviral Drug Distribution and Use | Public Information | Community Mitigation / Non-pharmaceutical Interventions |
|---|---|---|---|---|---|---|
| HHS Stage 6: Recovery and preparation for subsequent waves | Convene with appropriate stakeholders to assess criteria for potential cessation of enhanced public health support and generate a demobilization plan to describe staged withdrawal of enhanced public health support | Scale back surveillance operations | Prepare for a second wave | Prepare for a second wave | Measure public awareness and communications strategy effectiveness | Evaluate overall success of non-pharmaceutical interventions and community mitigation strategies and submit these data for an After Action Report (AAR) and in preparation of subsequent waves. |
| | Submit an AAR and revise the plan as appropriate | Evaluate surveillance activities | Inventory pandemic vaccine, pharmaceuticals, and supplies | Inventory antivirals and medical countermeasure supplies | Continue public education through media and community outreach activities | |
| | | Provide a retrospective characterization of the pandemic | Evaluate vaccination protocols and procedures | Evaluate overall success of antiviral and medical countermeasures administration and response activities and submit this data for an AAR | Review and revise Interim Risk Communications plan from lessons learned and AARs. | |
| | | Describe effectiveness of recommended prevention and control measures | Document personnel available to work in second wave vaccination clinics | | | |
| | | | Evaluate overall success of vaccination effort and response activities and submit this data for an AAR | | | |